SMI Innovations Project: Southwest Pennsylvania Case Study

The Connected Care Pilot Program

October 1, 2012

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SMI Innovations Project: The Connected Care Pilot Program
Southwest Pennsylvania Case Study

The Pilot Program At a Glance

Partners: University of Pittsburgh Medical Center (UPMC) *for You*, Community Care Behavioral Health (CCBH), Allegheny County Department of Human Services, Office of Behavioral Health

Planning and Implementation: Key intervention components included member assessments that addressed behavioral health, medical, and psychosocial needs; education about appropriate emergency department (ED) use; and follow-up after hospitalizations. Connected Care provided outreach and support to members as needed, rather than delivering set intervention strategies based on the member's risk. The partners actively engaged all members who agreed to work with a care manager, regardless of whether members provided consent to share health information.

Evaluation Findings: Mental health hospitalizations and readmissions improved for all Connected Care members, most likely because of targeted member outreach and education and concurrent initiatives focused on similar goals. Positive changes in ED use among members who became eligible after the intervention started, relative to the comparison group, were likely due in part to improved processes and greater cross-staff familiarity in the second year.

Strategies and Challenges: As expected with any pilot program, Connected Care encountered system-level challenges as well as challenges engaging members and providers. Developing a shared information tool across two systems was a challenge despite sophisticated information systems, in-house expertise, and UPMC and CCBH's shared corporate structure. When the plans did not pursue two major planned outreach strategies because of confidentiality concerns, the plans were flexible, conducting most of the initial outreach to members and also reaching out to select primary care and behavioral health providers to help engage members. Connected Care leaders also developed partnerships and synergies with related initiatives in Allegheny County to build broad support for care integration.

Lessons Learned: The Connected Care partners' experiences hold lessons that might inform others interested in health care integration. Further research is needed to better understand what specific components contributed to the reductions in hospitalizations, readmissions, and ED use; however, several factors likely contributed to these improved outcomes: Connected Care reached a large number of members at risk of additional ED use or a readmission; UPMC had a large presence in Allegheny County and existing infrastructure to support integrated activities; and the partners built a foundation for change and movement toward integrated care through other plan initiatives. Although UPMC and CCBH benefited from shared corporate leadership and support, they still encountered implementation challenges. States and managed care partners looking to improve integration of physical and behavioral health care could learn from the Connected Care experience, both in terms of implementation strategies and challenges to expect.

The Rethinking Care Program is an initiative of the Center for Health Care Strategies (CHCS) with funding support from Kaiser Permanente, which seeks to improve the quality and lower the costs of care for high-need, high-cost Medicaid beneficiaries. In 2009, the Pennsylvania Department of Public Welfare (DPW) and CHCS partnered to launch two pilot programs under this initiative, focusing on the integration of physical and behavioral health care services for adult Medicaid beneficiaries with serious mental illness (SMI) and co-occurring physical health conditions. Despite the growing consensus that improved integration of physical and behavioral health care will improve quality and lower costs (Institute of Medicine 2006; World Health Organization 2003), evidence on how best to achieve such integration is lacking. The Pennsylvania pilot programs, collectively referred to as the SMI Innovations Project, were designed to test various approaches to addressing this challenge.

Drawing on findings from discussions and focus groups with key stakeholders and an analysis of Medicaid claims data, this case study describes the Connected Care pilot program in Southwest Pennsylvania. We first provide background information on the SMI Innovations Project and Connected Care, then follow with a discussion of the planning process and implementation strategies. Next, we report findings for the program's performance measurement goals, rates of member participation, and outcome measures. We then identify successful strategies and challenges encountered during implementation. We conclude with lessons that might inform others interested in behavioral and physical health care integration. A logic model (Figure 1 at the end of this document) identifies the anticipated sequence of events that connect program development and implementation to desired results.

Background and Overview of Connected Care

Delivery and payment systems for physical and behavioral health care operate through separate county and state agencies; as a consequence, many Medicaid physical and behavioral health agencies function in silos. In addition, physical and behavioral health providers rarely coordinate with one another and have few financial incentives to do so. Medicaid beneficiaries with SMI are often negatively affected by this lack of coordination. High-need, high-cost clients can also be transient and stigmatized by their illness and often receive more sporadic and lower quality care than many other Medicaid beneficiaries, resulting in poorer outcomes for patients and higher costs for states.

In light of these issues, the Pennsylvania Department of Public Welfare (DPW)—the agency that administers the state's Medical Assistance (or Medicaid) program—launched a two-year pilot initiative, the SMI Innovations Project, in Southeast and Southwest Pennsylvania. The pilot in the southwest, called Connected Care, focused on integrating care for Medicaid beneficiaries with SMI living in Allegheny County and was a collaboration among three partners: (1) University of Pittsburgh Medical Center's (UPMC) Medicaid managed care plan, UPMC *for You*, (2) Community Care Behavioral Health (CCBH), the behavioral health managed care organization (BHMCO), and (3) the Allegheny County Department of Human Services, Office of Behavioral Health. UPMC *for You* and CCBH are partner companies, both owned by the UPMC health system. UPMC has a large presence in the county, both as an insurer and provider. For example, of the 150,000 Allegheny County residents enrolled in the state's Medicaid managed care program, HealthChoices, 45 percent are enrolled in UPMC *for You* (two other Medicaid managed care plans operate in the county). CCBH is the sole HealthChoices BHMCO in the county and manages mental health services and substance use treatment in 35 of the state's 67 counties.

DPW partnered with UPMC and CCBH in Allegheny County for several reasons. DPW wanted to test models of integration involving different plan structures and in different areas of the state.

UPMC is a large, integrated health system that includes affiliated physician practices and academic, community, and specialty hospitals, and operates both a physical and behavioral health Medicaid managed care plan (UPMC 2010). UPMC's structure provided a different model from other areas, where physical and behavioral health plans are separate entities. Allegheny County includes Pittsburgh, the state's second most populated city, providing an urban site in the western part of the state (U.S. Census 2010). UPMC and CCBH had begun to work on behavioral and physical health integration, and DPW also worked with both organizations, creating a natural partnership for this project.

Connected Care used a centralized, top-down structure with full corporate support and leadership from health plan managers and executives. Although UPMC *for You* and CCBH are members of the same family of companies with main offices in the same corporate complex, staff from these organizations had not always worked together systematically. In recent years, they had begun to collaborate on integration initiatives, such as a pilot program that places physical and behavioral health services in the same office; patient-centered medical homes; and a project to connect children in foster care with primary, dental, and behavioral health care providers. Despite these recent efforts, the two entities still operated independently. Connected Care required staff from both organizations to build relationships and learn each other's terminology and practices. Both organizations implemented various quality improvement programs, and corporate leaders viewed this initiative as an opportunity to change the way they provided care to their members with SMI and to close gaps in care.

The Allegheny County Department of Human Services was the third partner in this pilot. As the primary contractor for behavioral health services, a key role of the county was to ensure that Connected Care was meaningful and relevant for consumers and helped establish and facilitate meetings of the Consumer and Family Advisory Committee.

Planning Process

Because the behavioral and physical health care systems operate independently, Connected Care required extensive planning by both plans and the county. During the six-month planning period, the partners discussed confidentiality and member privacy issues related to the sharing of health information. They also established processes for information sharing, developing integrated care plans, and identifying and engaging members, among other processes and logistics. Staff members from the Allegheny County Department of Human Services Behavioral Health Office facilitated development and ongoing support for the Consumer and Family Advisory Committee, which played an active role in the planning phase to ensure key decisions reflected consumer input. They provided input on materials developed for members, how the project could most benefit consumers, and the potential role of a wellness or peer advocate. Consumers and family members were initially part of the Connected Care planning team but later split off into a separate committee to focus on issues most relevant for consumers. The committee of six to seven individuals met three times a month in the beginning of the project, then monthly, and finally, quarterly. In the second year of the project, the committee engaged two members who were involved with Connected Care to obtain feedback from actual participants.

Due to the sensitive nature of members' behavioral health information, confidentiality was a primary concern in the early planning stage. After extensive discussions with DPW and internal discussions with corporate leaders and legal counsel about confidentiality, UPMC *for You* and CCBH ultimately took a more conservative approach, deciding that the plans should obtain a member's consent to share any health information with one another or with providers, other than notification

of a hospitalization or ED visit. Separate consent was required for the plans to exchange information about a member's substance use treatment or HIV status; this information was never shared with providers.

Using the parameters DPW established, Connected Care partners used Medicaid claims, enrollment data, and utilization history to identify adults with SMI in UPMC *for You* (Medicaid plan) or UPMC *for Life*, a Medicare special needs plan (SNP) for dually eligible Medicare and Medicaid members.[1] In addition, members had to be enrolled in CCBH. DPW defined individuals with SMI as those diagnosed with schizophrenia or major mood and borderline personality disorders. DPW identified eligible members in the comparison group—members enrolled in CCBH but *not* in UPMC *for You*, who resided in Allegheny County, and who met the same diagnosis and age criteria as study group members. During the planning phase, Connected Care leaders initially estimated that there would be approximately 3,100 eligible Medicaid members.

To identify members with the greatest needs, partners classified each eligible member into one of four groups based on their risk for adverse behavioral or physical health events.[2] CCBH classified each member as having low or high behavioral health risk, based on a combination of factors from a member's 12-month treatment history, such as prior admission to a state hospital, multiple inpatient admissions, or authorization for certain outpatient services (Appendix Table 1). UPMC *for You* assigned high physical health risk for members with three or more ED visits during the past three months, or three or more inpatient admissions over the past six months. Combined, members were placed into one of four categories: high/high, high/low, low/high, and low/low behavioral and physical health risk.

At the start of the intervention in July 2009, Connected Care identified approximately 4,800 eligible Medicaid members and 1,900 SNP members. Based on members' behavioral-physical health risk profile, the Connected Care partners devised a three-tier strategy to prioritize members for pilot program services. The first tier (Tier 1) initially included only those members in the high/high group who would receive the most intensive services. However, because there were fewer members in that group than expected and the partners sought to reach more, those in the low behavioral/high physical health risk group were added to Tier 1. Tier 2 included members with high behavioral/low physical health risk, and Tier 3 included members with low behavioral/low physical health risk. Connected Care stratified members into these three tiers on a monthly basis. The plans could move members to a higher risk level based on service use or to a lower risk level if a member's health was stable for one year.

Implementation

The Connected Care intervention activities reflected several components identified by DPW as elements or pillars of an integrated system of behavioral and physical health care. These activities were expected to help bring about the intermediate- and long-term outcomes illustrated in the logic

[1] Study group members were eligible if they had at least one claim with a diagnosis of SMI between July 1, 2007, and June 30, 2011; were at least age 18 on the date of service of the first claim with a diagnosis of SMI; and resided in Allegheny County.

[2] The four-quadrant risk model is described in B. J. Mauer. *Behavioral Health/Primary Care Integration: The Four Quadrant Model and Evidence-Based Practices.* Rockville, MD: National Council for Community Behavioral Healthcare, 2006.

model (Figure 1 at the end of this document). Below, we describe Connected Care system-level strategies designed to improve integration and information exchange. We then highlight activities related to member and provider engagement.

System-Level Activities

Connected Care conducted several system-level activities to enhance integration and information sharing between the plans and with community providers. The plans developed integrated care plans and conducted clinical case reviews with a multidisciplinary team of providers. The plans also established processes to notify prescribers of refill gaps for members prescribed atypical antipsychotics, and to notify each other and providers when a member was hospitalized or had an ED visit.

To facilitate information sharing between plans, UPMC *for You* and CCBH developed an integrated care plan that was designed to merge into one location information from each plan's separate care management system. To create the integrated care plan, CCBH prepared a data file for Connected Care members including behavioral health authorizations, notifications, claims, and clinical notes, which UPMC incorporated into a shared application, along with information from its clinical database. The integrated care plan included the member's tier and risk level, consent status, health conditions, service utilization, wellness and support service needs, gaps in care, case notes, and planned interventions or next steps to engage the member. The plans created an integrated care plan for every member, regardless of whether the member provided consent to share their health information. Mental health and substance use information was included only if a member provided explicit consent to share behavioral health information, and the care plans were shared only between health plan and BHMCO staff.

A multidisciplinary team of staff from UPMC *for You* and CCBH held clinical case reviews for members with complex needs, meeting at least biweekly. The team included each plan's medical director, care manager, clinical supervisor, and a UPMC pharmacist. At each meeting, the team reviewed care plans, medication lists, potential care gaps, engagement strategies, and follow-up steps for seven or eight high-risk members. During these meetings, the plans assigned a lead care manager to coordinate the care for each member. Reasons for the case review varied from needing to locate a difficult-to-reach member, discussing care plans for members who had a recent ED visit or hospitalization, or seeking input on a challenging client. Plan medical directors also identified members to include in the Connected Care case review meetings when conducting routine reviews—for example, to approve a hospital stay.

Consumer Engagement

Connected Care focused on engaging Medicaid members beginning in July 2009 and began adding SNP members to engage in September 2009. Initial member-engagement approaches included letters to members describing the program and its potential benefits and phone calls to members from plan care managers. UPMC sent members a letter explaining the program and offering a $25 gift card to members who received an annual checkup at their primary care provider (PCP). Care managers called members to explain the program and obtain consent, and enrolled interested members. Care managers also tried to enroll members through routine telephone contact. In conjunction with the member letters and telephone outreach, plan leaders and the Consumer and Family Advisory Committee presented Connected Care directly to members at consumer events, such as meetings of the Community Support Program. Connected Care also relied on nurse care managers to engage eligible members. UPMC had placed these employees in select primary care

practices in July 2008 (approximately one year before Connected Care began) as part of its patient-centered medical home pilot program. A member could also choose to designate a family member, friend, or peer as a wellness advocate, someone the member trusted to help him or her with their recovery goals and coordinate care across providers.

Connected Care generated monthly lists of members that UPMC *for You* and CCBH care managers used to contact members. The plans focused first on engaging members with high physical health risk (Tier 1) and then on members with high behavioral and low physical health risk (Tier 2). Care managers had caseloads of 200 to 265 members (including members not eligible for Connected Care).[3] Care managers became overwhelmed with the number of members once they began to engage Tier 2 members (Table 1). As a result, Connected Care adjusted its engagement strategy: After engaging Tier 1 members, care managers focused on engaging members with a recent hospitalization or ED visit (regardless of risk/tier), and then engaged Tier 2 members.

Table 1. Number of UPMC *for You* Members Identified, by Tier

	Number of UPMC *for You* Members Identified			
As of	High PH Risk (Tier 1)	High BH-Low PH Risk (Tier 2)	Low BH-PH Risk (Tier 3)	Total
September 2009	121	1,101	3,375	4,597
January 2010	221	1,200	3,579	5,000
July 2010	348	1,536	3,945	5,829
January 2011	434	1,734	4,230	6,398

BH = behavioral health; PH = physical health; UPMC = University of Pittsburgh Medical Center.

Rates of consent were slow to increase. Within the first few months, Connected Care recognized that it needed to increase the number of members who consented and revised its strategy. First, it changed the incentive (after receiving DPW approval). Although nearly 2,500 members responded to the gift card incentive in the fall of 2009, the number of consents did not increase substantially. When the incentive was offered in April 2010, Connected Care required members to return the signed consent form to receive the $25 gift card. Second, to obtain greater involvement from behavioral health providers, in early 2010, CCBH began reaching out to community behavioral health providers to explain the program and enlist their help in engaging members and obtaining consent. CCBH staff members met with behavioral health providers with eligible Connected Care members active in a CCBH intensive or acute case management program or community treatment team.

Connected Care's strategies resulted in an increase in member consent. During the first six months, the program obtained consent from 316 members. Member consent increased to 651 at the end of April 2010 and to 1,503 at the end of January 2011.[4] CCBH reported that two behavioral health providers obtained consent from 50 members after their meetings. The number of consents increased after the second offering of the gift card incentive. Regardless of consent, the partners

[3] UPMC care managers estimated that about 75 percent of their cases were Connected Care members. CCBH care managers were unable to estimate how many of their members were eligible for Connected Care.

[4] The number of members providing consent included both Medicaid and SNP members, and members who provided consent and later withdrew consent or disenrolled.

actively engaged all members who agreed to work with a care manager. The partners estimated that approximately 2,500 members agreed to work with a care manager over the course of the intervention period.

Care managers noted that members had varying perspectives on sharing their health information and, ultimately, consenting to participate in Connected Care. Some members assumed providers were already sharing information related to treatment and care plans, while others expressed concerns when they realized providers shared information about their hospitalizations or ED visits. Some members noted feeling stigmatized when information about their behavioral health conditions was shared with their PCPs.

Once the care managers engaged members, they assessed member needs and tailored the intervention to meet their most critical needs first. UPMC care managers focused on helping members manage their chronic physical health conditions, preventing readmissions and unnecessary ED visits through member education and follow-up within 24 or 48 hours of a hospital admission or ED visit,[5] and addressing members' psychosocial needs. UPMC care managers coordinated with hospital inpatient staff to assist with discharge planning for hospitalizations related to physical health conditions or alcohol or drug use, and contacted members post-discharge to connect them with medical or social services, such as home health or transportation needs (contact within two days of discharge was their goal). During follow-up after a hospital admission or ED visit, care managers assessed members' health needs and asked about their environment or other factors that could affect their health—"fact-finding," as one care manager put it. CCBH care managers reviewed all hospital and ED usage, whether members had a PCP and behavioral health provider or received other services, such as from a community treatment team or mobile medication team.[6] They worked closely with behavioral health providers, coordinated with hospital staff for psychiatric admissions, provided assistance with medical needs identified during the hospitalization, and followed up with members after psychiatric hospitalizations, referring members to a PCP or other services as needed. They emphasized the importance of recovery-oriented care, taking into account goals that are important to the member; for members with SMI, they prioritized the member's most critical need at the time of their contact. In the words of one care manager,

> "Behavioral health providers… try to meet a client where they're at and honor the way they're living… using a lot of techniques through recovery initiatives and motivational interviewing strategies in order to say, 'Maybe you don't have to go to the ER, maybe go to urgent care. Or, if you're stranded, call our on-call phone, versus showing up at the ER…' Sometimes there are other changes, stressors going on in their lives they don't know how to manage, so they go to where they feel is a safe place, where there is staff, where they can get a sandwich. You have to tease out how many people are going because they have pain and don't know how to manage and [those who] want medication or a script quick. [In] trying to get them to address their physical health issues, so much of [the emphasis] has been on their psychiatric illness and taking psychiatric medications, but by the way, we need to manage

[5] UPMC care managers strove to conduct outreach within 48 hours of a hospital admission or ED visit. CCBH care managers followed up with members during a hospital admission or ED visit or within 24 hours, depending on where the member was discharged to.

[6] Community treatment teams typically provide care for members with schizophrenia, psychotic disorder, or bipolar disorder who need more support than outpatient behavioral health services or traditional case management.

> [their] diabetes, too. So it's trying to provide comprehensive care, [but sometimes it's important to recognize that for a client who] has just agreed to take his injection once a month, that's progress for him."

UPMC practice-based care managers were able to provide additional support for members because they could meet with them in person and because they shared established relationships, having served as care coordinators for about a year before Connected Care began.[7] For example, the nurse care manager based in a practice in McKeesport tried to meet with all Connected Care members when she knew they had scheduled office visits, explain the program and consent form, provide member education, help members with medication adherence or wellness goals, and make follow-up calls after ED visits or hospitalizations. In addition, she reviewed reports of members with hospitalization and ED visits, potential care gaps, and medication refill gaps; communicated with primary care and behavioral health providers about concerns based on those reports or member contact; and provided clinical support to carry out any follow-up steps with members that PCPs recommended. As a result of her coordination and information sharing, she became a resource to both physical health and behavioral health providers, facilitating care coordination. In her own words,

> "If patients are running low on behavioral health medications… I can help facilitate getting them to the right place in the service group, getting their appointment moved earlier, or getting them into the clinic for a short-term supply of medication. If we know that there is a problem with someone not staying on their treatment plan, I've had [behavioral health provider] Mon Yough staff meet with the patient and help reinforce things, including getting them to the appointment."

Provider Engagement

Connected Care engaged both physical health and behavioral health providers through group and individual meetings and presentations. Initial outreach focused on providers participating in UPMC's medical home pilot initiative or chronic care management Medicaid pay-for-performance program. Plan leaders met both with the primary care practice, Health First, where a UPMC nurse care manager was placed, and the behavioral health provider, Mon Yough Community Services, in McKeesport, about a 30-minute drive from Pittsburgh. In early 2010, CCBH leaders visited the largest behavioral health providers in the county, including those providing case management, assertive community treatment teams, and enhanced service coordination programs, to provide information about the program, the consent form, and the process for sharing information for members who provided consent. The partners reported that physical health providers were interested in knowing about psychiatric hospitalizations, and behavioral health providers were interested in receiving physical health information about their patients.

To increase collaboration and information sharing, the plans were required to notify providers (and each other) of members' hospitalizations, ED visits, and refill gaps (for those prescribed atypical antipsychotics). UPMC modified its existing medication therapy management program to automatically generate refill gap notification letters to prescribers. The plans prepared daily reports

[7] This information is based on the experience of one practice-based care manager; we were unable to verify whether these activities were representative of other practice-based care managers due to scheduling and availability issues.

of members' hospitalizations and ED visits, and care managers were responsible for notifying individual providers. CCBH care managers notified providers via phone or email. UPMC care managers prepared and faxed letters to PCPs that included information on high ED use; admissions, including psychiatric admissions; and potential gaps in care, such as missing documentation of a mammogram, a Pap smear, or for members with diabetes, a hemoglobin A1c test or dilated eye examination.

Evaluation Findings for Performance and Outcomes Measures

The Connected Care program established processes to meet the DPW performance measures. In this section, we describe DPW's assessment of whether Connected Care met these performance measures, and then summarize findings from the outcomes analysis, including a description of study and comparison group member characteristics.

Performance Measures

DPW required the pilot partners to meet six measures over the two-year intervention period: four collaboration measures in both years and two incremental improvement measures in the second year. The Connected Care program met three of the four collaboration measures in both years and both measures of incremental improvement in the second year (Table 2). The three collaboration measures that the program met were (1) stratification of members into risk groups; (2) development of integrated care plans; and (3) notification of hospital admissions. For the fourth collaboration measure, notification of refill gaps for atypical antipsychotics, the plans notified prescribers of 47 percent of refill gaps for atypical antipsychotics during the first year, short of the 90 percent target. The partners were still finalizing their pharmacy notification letters several months after the intervention period started, which likely contributed to an inability to meet the measure in the first year. In the second year, the rate improved to 73 percent but still fell short of the 85 percent target. UPMC's automated system, designed for its Medicare medication therapy management program, generated and sent notification letters to prescribers on record. The plan managers noted that they were not always aware who the prescriber was. The automated notification process did not enable plan staff to see where the information was being sent. It is possible that their system did not identify the prescription gaps in the same manner that DPW identified them, leading to fewer letters being generated than DPW expected.

Table 2. Summary of Performance Measures

Performance Measure	Met Goal in Year 1	Met Goal in Year 2
Stratification of at least 90 percent of members into risk groups and annual restratification	✓	✓
Patient-centered care plans	✓	✓
Notification of at least 85 or 90 percent of admissions within one business day of responsible entity learning of admission	✓	✓
Prescriber notification of at least 85 or 90 percent of medication refill gaps for atypical antipsychotics leading to a medication possession ratio of < 0.8[a]		
Incremental Improvement Measure		
ED Visits	n.a.	✓
Hospitalizations, Combined for Physical Health and Mental Health	n.a.	✓

Source: Island Peer Review Organization and DPW Office of Medical Assistance Programs.

Note: A check (✓) indicates that the performance measure was met. n.a. = not applicable (measure added for Year 2)

[a] Medication possession ratio, a measure of continuity or adherence, is the ratio of the number of days between the most recent refill and the next expected refill to the number of days between the most recent refill and the next actual refill.

Outcomes Measures

To understand whether the SMI Innovations Project demonstrated the promise to improve care, we analyzed Medicaid claims and enrollment data for eligible members in the study and comparison groups to determine whether there were changes in ED visits; physical health, mental health, and drug and alcohol treatment-related hospitalizations; readmissions (for any type of hospitalization); and the number of days between hospitalizations. To isolate potential changes due to the intervention rather than existing long-term trends, we used a difference-in-differences approach (regression-adjusted), comparing changes in the rates for the study group between the baseline year and the intervention period with changes in the rates for the comparison group. In this population-based analysis, we assessed outcomes for all members who were eligible for the program regardless of their participation in the intervention. We conducted a robustness check to assess the comparability of study and comparison groups before the intervention started. To supplement this analysis, we examined outcomes for only the 10 percent of members who consented to participate. Because the partners refined their engagement strategies and activities during the first several months of the first year, we hypothesized that outcomes might differ for those who were eligible before the start of the intervention period (referred to as the early cohort) and those eligible after (the late cohort) and assessed outcomes separately for these two cohorts.

The study group included 8,633 members; 63 percent were eligible before and 37 percent after the intervention started (Table 3). The comparison group (Allegheny County residents enrolled in CCBH but not UPMC) included 10,514 members, and the same proportions were eligible before and after the start of the intervention period as the study group. At baseline, study and comparison groups were generally similar on measured characteristics, such as age, gender, and racial and ethnic characteristics, although small differences were statistically significant because of the large number of members in each group (Appendix A, Table A.19). Based on claims data, a slightly higher percentage of study group members had physical health conditions, such as diabetes (14.9 versus 12.9 percent), hyperlipidemia (22.5 versus 18.8 percent), and hypertension (33.0 versus 28.8 percent), than comparison group members did at baseline. The study group also had a higher rate of hospitalizations at baseline than the comparison group (75.9 versus 67.9 hospitalizations per 1,000 members per month, $p = <0.01$).

Table 3. Number of Study and Comparison Group Members and Enrollment

	Study Group			Comparison Group		
	All Members	Early Cohort	Late Cohort	All Members	Early Cohort	Late Cohort
Number of Eligible Members	8,633	5,425	3,208	10,514	6,657	3,857
Number Who Consented	870	778	92	--	--	--
Enrollment, Mean (months)	18.3	20.3	15.1	15.9	18.8	11.0
Percent Enrolled 18-24 Months	59.0	74.8	32.3	49.6	68.5	17.0

Note: Members who consented could have withdrawn their consent at any time. The early cohort (cohorts 2–3) included UPMC *for You* and UPMC *for Life* members eligible between July 1, 2007, and June 30, 2009. The late cohort (cohorts 4–5) included UPMC *for You* and UPMC *for Life* members eligible between July 1, 2009, and June 30, 2011.

Because Connected Care prioritized outreach and obtaining consent from high-risk members, those who consented were more likely to have greater behavioral and physical health needs and service use than other eligible members. Members who consented had a higher proportion of behavioral health and physical health conditions and a higher rate of hospitalizations and ED use at baseline, compared with study group members who did not provide consent (Appendix A, Table A.20). In addition, these members were slightly older than both study group members who did not consent (43.8 versus 39.0 years) and comparison group members (38.0 years), and a greater proportion of members who provided consent were African American than study group members who did not consent (40.0 versus 34.1 percent).

Although the plans used the member's consent status to guide what information the plans could share with each other and with providers, they actively engaged all members who agreed to work with a care manager, regardless of consent. The partners estimated that approximately 2,500 members agreed to work with a care manager over the course of the intervention period.

Effects on ED and Hospital Use

During the intervention period, we observed favorable changes in mental health hospitalizations and all-cause readmissions for the entire study population. Additionally, among the late cohort, we found favorable changes in ED use. Although we used a nonexperimental design, we confirmed the findings in regression analysis. Because these positive findings represent only one test of health care integration, future studies should attempt to identify the factors that led to changes in outcomes.

Mental Health Hospitalizations. There was a decrease in mental health hospitalizations among Connected Care consumers compared with an increase in the comparison group. Although this phenomenon was observed for the entire study population, it also held true for members who provided consent to share their health information and members of the late cohort (Table 4). The mental health hospitalization rate (per 1,000 members per month) dropped 4 percent for the full Connected Care study population (41.1 to 39.6) but rose 10 percent for the comparison group (33.8 to 37.2); this corresponds to a rate that is an estimated 12 percent lower than the projected trend without the intervention.[8]

Among late cohort members (who had a lower baseline rate of mental health hospitalizations than those in the early cohort), there was an increase in the mental health hospitalization rate during the intervention, but it was smaller than that of the comparison group; the resulting difference-in-differences estimate was statistically significant ($p < 0.01$).

[8] We estimated the projected trend by applying the percent change observed in the comparison group to the study group to identify what the rate would have been without the intervention and comparing that rate with the actual observed rate for the study group. For example, the rate of mental health hospitalizations in the comparison group increased 10 percent (from 33.8 to 37.2 per 1,000 members per month); applying that percent change to the Connected Care full study population's pre-intervention rate of 41.1, we would estimate that without the intervention, the rate would increase 4.1 (10 percent) to 45.2. Instead the actual intervention rate was 39.6, a difference of 5.6 or 12 percent of the projected pre-intervention rate of 45.2.

Table 4. Average Number of Mental Health Hospitalizations, per 1,000 Members per Month

	Study Group			Comparison Group			Difference in Differences	
	Pre-Intervention	Intervention	Difference	Pre-Intervention	Intervention	Difference	Estimate	*p*-Value
All Members	41.1	39.6	-1.6	33.8	37.2	3.4	-4.9	0.041
Members who Consented	74.7	59.4	-15.3	33.8	37.2	3.4	-18.6	<0.01
Early Cohort	47.6	37.9	-9.7	41.4	34.5	-6.8	-2.9	0.351
Late Cohort	25.8	43.3	17.6	16.2	45.1	29.0	-11.4	<0.01

Note: The study group included all members who met the program eligibility based on Medicaid claims or enrollment data, regardless of actual participation in the program. Members who consented could have withdrawn their consent at any time. The early cohort (cohorts 2–3) included members who were eligible between July 1, 2007, and June 30, 2009. The late cohort (cohorts 4–5) included members eligible between July 1, 2009, and June 30, 2011. See Table 3 for sample numbers. The rate was calculated by multiplying the average number of hospitalizations for each member per month (number of days enrolled in both plans divided by 30) by 1,000. We weighted all analyses to account for members who were enrolled in both the physical and behavioral health programs simultaneously for only part of the year. The weights are a function of the total number of days enrolled in both plans and include mental health inpatient utilization based on the technical specifications of Healthcare Effectiveness Data and Information Set (HEDIS®) 2009 Inpatient Utilization–Mental Health Utilization.

Among members who gave consent to share their health information, the mental health hospitalization rate decreased by 20 percent (74.7 to 59.4). This effect was one of the largest; however, members who consented were more likely to have other chronic health conditions (particularly hypertension, high cholesterol, diabetes, chronic obstructive pulmonary disease, and asthma) and greater ED and hospital use from the start, suggesting there was greater room for improvement. In addition, consented members were self-selected and there was no comparable subgroup in the comparison group. The large change in the mental health hospitalization rate, therefore, might be as attributable to unobserved characteristics, such as the member's own motivation to change, as it is to the intervention.

All-Cause Readmissions. The all-cause readmission rate improved for all study group members and for those in the late cohort (Table 5). The percentage of all-cause readmissions within 30, 60, and 90 days of a discharge decreased for the study group while remaining relatively stable for the comparison group. For example, the 30-day, all-cause readmission rate dropped nearly 10 percent (43.1 to 38.9 percent) for the study group but increased slightly for the comparison group (39.5 to 39.7); the difference in these changes was statistically significant ($p < 0.01$). The 30-day, all-cause readmission rate for the Connected Care full study population was an estimated 10 percent lower than we projected would have occurred in the absence of the program, based on the comparison group's experience. The effect was larger for members of the late cohort with the 30-day, all-cause readmission rate falling 20 percent (44.7 percent to 35.7 percent) for the study group but rising 2.0 percent (39.2 to 40.0) in the comparison group ($p < 0.01$).

Table 5. Hospital Readmission Rates

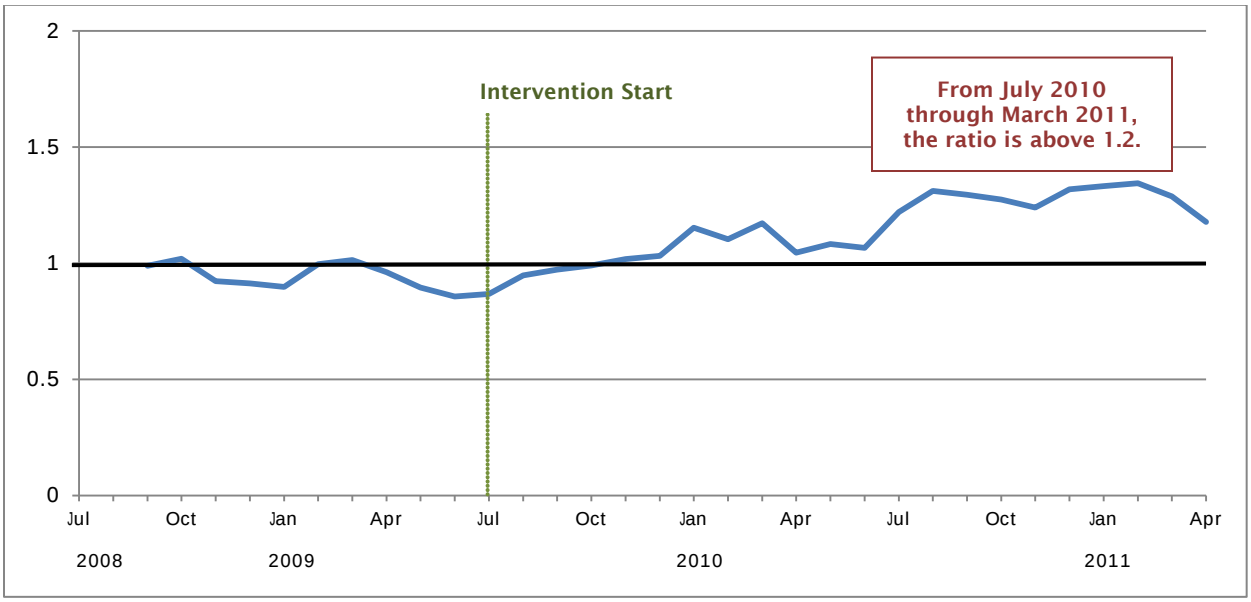
Readmission Period	Study Group			Comparison Group			Difference in Differences	
	Pre-Intervention	Intervention	Difference	Pre-Intervention	Intervention	Difference	Estimate	*p*-Value
All Members								
30 days	43.1	38.9	-4.2	39.5	39.7	0.2	-4.4	<0.01
60 Days	53.9	49.4	-4.5	50.3	50.6	0.3	-4.8	<0.01
90 Days	61.3	56.4	-4.9	57.5	57.4	-0.1	-4.8	<0.01
Late Cohort								
30 days	44.7	35.7	-9.0	39.2	40.0	0.8	-9.8	<0.01
60 Days	55.1	46.7	-8.4	49.4	51.2	1.8	-10.2	<0.01
90 Days	61.4	54.2	-7.2	56.4	57.3	0.9	-8.1	<0.01

Note: The study group included all members who met the program eligibility based on Medicaid claims or enrollment data, regardless of actual participation in the program. The late cohort (cohorts 4–5) included members eligible between July 1, 2009, and June 30, 2011. See Table 3 for sample numbers. We weighted all analyses to account for members who were enrolled in both the physical and behavioral health programs simultaneously for only part of the year. The weights are a function of the total number of days enrolled in both plans.

Another method for examining the change in readmissions is to assess whether members remained in the community for a longer period of time between hospitalizations. Although this measure does not necessarily indicate improvement in functioning, our assumption is that an increase in the number of days between hospitalizations would be a positive outcome. For both the study and comparison groups, we calculated the three-month moving average of the number of days between the date of a hospital discharge and the next hospital admission regardless of diagnosis.[9] We divided the two moving averages (study group over comparison group) to create a ratio (Figure 2). A ratio greater than 1 indicates that study group members, on average, had more days in the community than comparison group members. During the baseline year, the ratio was consistently near or below 1. From November 2009 through April 2011 (the last month in which we measure days in the community), the ratio was greater than 1. In fact, from July 2010 until April 2011, the three-month moving average for the study population was consistently 20 to 30 percent larger than it was for the comparison group.

[9] We chose a three-month moving average, because it enabled us to examine trends without large swings from one month to the next. For complete details on the calculation, see Appendix B of the full evaluation report.

Figure 2. Number of Community Days, As a Ratio of Three- Month Moving Average for the Study Group Over the Comparison Group



Note: Community days indicate the number of days between a hospital discharge and the next admission. We divided the three-month moving average for the study group by the three-month moving average for the comparison group to generate the ratio for this outcome. A ratio greater than 1 indicates that study group members had more days between hospitalizations than control group members in the prior three months. Admissions that did not result in a readmission within six months of the end of the intervention period were excluded, because the number of community days would have been truncated and misrepresent the actual number of days in the community.

ED Use. Among the late cohort, changes in ED visits favored the study group. Although the rate of ED visits increased for both the study and comparison groups during the intervention period, it increased by a smaller margin for the study group. The rate of ED visits (per 1,000 members per month) increased by 3 percent in the study group (184.4 to 190.0) and by 17 percent in the comparison group (167.1 to 195.6 percent, $p = 0.052$, Table 6). When assessing changes in the ED rate across the four 6-month calendar periods, the rate declined steadily in all four periods for the study group but only in the first three periods for the comparison group. The decrease was larger in the study group in the first six months of 2010 ($p = 0.034$) and the first six months of 2011 ($p < 0.01$). Although we did not identify a similar change in ED use among the full study population, these changes nonetheless indicate that the program might hold promise for reducing ED use.

Table 6. Average Number of ED Visits per 1,000 Members per Month, in the 12-Month Pre-Intervention Period, Full Two-Year Intervention Period, and Each 6-Month Period of the Intervention,[a] Cohorts 4 and 5

	Study Group			Comparison Group			Difference in Differences	
	Pre-Intervention	Intervention	Difference	Pre-Intervention	Intervention	Difference	Estimate	*p*-Value
Full Intervention	184.4	190.0	5.7	167.1	195.6	28.5	-22.9	0.052
Number of Members	3,208	3,208		3,857	3,857			
July 1–Dec. 31, 2009	206.6	250.4	43.8	182.4	232.6	50.1	-6.3	0.808
Number of Members	1,404	1,404		1,042	1,042			
Jan. 1–June 30, 2010	190.2	195.3	5.1	176.6	216.1	39.6	-34.4	0.034
Number of Members	2,482	2,482		2,186	2,186			
July 1–Dec. 31, 2010	182.5	188.7	6.1	171.1	184.8	13.8	-7.7	0.583
Number of Members	3,091	3,091		3,019	3,019			
Jan. 1–June 30, 2011	182.5	169.3	-13.2	162.3	184.9	22.5	-35.8	<0.01
Number of Members	2,895	2,895		3,521	3,521			

Note: The study group included all members who met the program eligibility based on Medicaid claims and enrollment data, regardless of actual participation in the program. Cohorts 4–5 included members eligible between July 1, 2009, and June 30, 2011. The rate was calculated by multiplying the average number of ED visits for each member per month (number of days enrolled in both plans divided by 30) by 1,000. We weighted all analyses to account for members who were enrolled in both the physical and behavioral health programs simultaneously for only part of the year. The weights are a function of the total number of days enrolled in both plans. We included ED visits for all diagnoses and used the following HEDIS® 2009 Table AMB-B Codes to identify ED visits: CPT 99281-99285, UB revenue 045x, 0981, OR CPT 10040-69979, and POS 23.

[a] The study and comparison groups included only those members who were eligible for the intervention before the start of the respective six-month period.

Challenges and Strategies to Address Them

Throughout the development and implementation of Connected Care, the partners encountered unanticipated challenges and, in many cases, identified strategies to address them. In this section, we describe the system-level challenges, challenges related to engaging members and providers, and the changes partners made to their strategies to address these challenges.

System-Level Challenges and Strategies

Despite having sophisticated information systems and in-house expertise, developing a shared information tool was difficult. *The experience of Connected Care partners underscores the challenges of implementing an effective information tool that shares data across two systems, even if those systems belong to the same corporate entity*. The member-level databases maintained by UPMC and CCBH serve different purposes. UPMC uses a care management database for physical health care services, whereas CCBH's database is an authorization system with clinical notes for behavioral health care services. The integrated care plan did not extract the appropriate fields from the CCBH database, which meant that staff had to manually enter data into the integrated care plan (after having already entered the information into their own database) or the information was not shared with UPMC. The plans would have benefited from having time to test a prototype. Staff from both plans first looked together at the integrated care plan when it became available in December 2009—six months after the intervention began. Although Connected Care developed integrated care plans for more than 6,000 members in the first year, program leaders realized that it was challenging to develop integrated care plans for all eligible members. In the second year, they began considering what they might include in a simplified member profile.

Understanding that care integration would require system-level change, *Connected Care leaders developed partnerships and synergies with related initiatives in Allegheny County as a system-level strategy*. For example, because the Consumer and Family Advisory Committee did not have the manpower to take on major projects, it teamed with the Allegheny County Coalition for Recovery and the Center for Public Service for Psychiatry to promote integration, wellness, and recovery-focused care. The Allegheny County Coalition for Recovery held discussions among psychiatric residents and consumers with an SMI diagnosis at the University of Pittsburgh Medical School about barriers to care, how to engage consumers, and side effects of psychiatric medications. UPMC and CCBH were instrumental in moving the Allegheny County physical/behavioral health managed care organization (MCO) committee toward creating a universal consent form that all of the plans in the region might adopt, with DPW approval. They also discussed developing a tip sheet and education materials for emergency departments with contact information for MCOs and crisis intervention agencies.

Consumer-Level Challenges and Strategies

When the partners encountered challenges related to privacy with several of its planned consumer-engagement strategies, they identified alternatives. In addition to engaging members through the plans' care managers, Connected Care expected to be able to engage eligible members by sharing member lists with PCPs in the UPMC network and the Peer Support and Advocacy Network (PSAN), a consumer-operated organization that provides peer support and services for people with mental illness. The partners thought members would be more receptive to information about the program that came from their peers or their providers. However, after internal discussions about maintaining privacy and confidentiality of members, the partners decided not to share lists of members with those outside the plans. In response, Connected Care bolstered its efforts to engage community providers who had relationships with members and changed the incentive to engage members.

Connected Care leaders demonstrated flexibility after learning few members wanted a wellness advocate. After seeing that few members identified a wellness advocate during the first six months of the intervention period, program leaders learned that there was confusion about how much information could be shared with a wellness advocate and who could serve as a wellness advocate. In addition, members were reluctant to trust someone else with their health information and involve yet another person, on top of the numerous providers, case manager, and social worker already involved in their care. The partners discontinued this component until they could better identify how the wellness advocate could meet members' needs.

Defining intervention intensity based on risk levels was also challenging. Connected Care partners expected to vary the intensity of the intervention based on a member's assigned risk-level or tier. For example, the partners expected that members in the first two tiers would require the most intensive level of services, such as more frequent contact with program staff, a clinical case review, and additional referrals for services. In practice, however, staff encountered challenges contacting the large number of members in the second tier and found that members' needs varied greatly. In addition, members with high ED or hospital use across all tiers required more immediate attention. As a result, Connected Care provided outreach and support to members as needed, rather than delivering set intervention strategies based on the member's risk tier.

Provider-Level Challenges and Strategies

The plans focused their outreach on select primary care practices and behavioral health providers when they could not implement their initial provider engagement plans. The partners planned to engage PCPs through UPMC physician account liaisons, who had established relationships with PCPs and share information

about members' gaps in care, similar to the processes used in other plan initiatives. When the partners decided not share member lists with PCPs as originally planned, they focused on engaging behavioral health providers and primary care practices involved in other initiatives, such as the medical home pilot program. Connected Care leaders also engaged providers in the broader community to build support and coordinate efforts around integration initiatives.

As a result of a greater focus on engaging select providers, the Connected Care program helped strengthen provider relationships. Hospitals and providers were accustomed to being in contact with CCBH for service authorizations and notifications before Connected Care; additional contact from CCBH care managers was a more natural extension. Providers saw value in the information and support they received from CCBH care managers. As one care manager noted:

> "…there are point people [at provider agencies] we contact to notify them of [a member's] admission. I think the benefit of that is that they know who we are, and we know who they are. There is that relationship, where they're responsive… and say, 'Hey, we just got a phone call from [name] from CCBH,' and the manager will tell the service coordinator to follow up. I think it's important that there's a relationship."

In particular, Connected Care was able to build on the relationship between a medical home pilot site, which served a large population of members with SMI, and a highly motivated behavioral health agency, Mon Yough Community Services. The practice-based care manager at Health First had already established a relationship with Mon Yough because she recognized the need for better coordination for members with SMI. Directors at Mon Yough saw the value in integration and actively partnered with UPMC. Connected Care provided a way to formalize what had previously been informal efforts to integrate care and supported the partnership between organizations with similar goals for integration.

Although Connected Care partners agreed that it was important to share information about hospitalizations and ED visits with providers, the frequency and mechanisms of the notification process (required by DPW) *did not effectively engage providers in care*. Providers appreciated knowing when their members were hospitalized or in the ED; however, *most of the feedback providers gave the plans was to inform them that these members were not their patients*. The partners suggested that the process needed to better fit the existing workflow of PCP practices so that practices were not inundated with additional paperwork. Care managers indicated that providers would be interested in understanding how to better connect with other providers with shared members. In a few instances, care managers indicated that providers contacted them after receiving notification about a Connected Care member's ED use, which led to additional follow-up.

Lessons Learned

Using insights from Connected Care partners and results from the outcomes analysis, we summarize lessons potentially useful for program developers and state officials interested in behavioral and physical health integration for Medicaid beneficiaries with SMI.

System-Level Lessons

Building on initiatives that share common goals can facilitate efforts to integrate care. The Connected Care pilot program built on other plan and state-level initiatives that sought to reduce hospitalizations, readmission, and excessive ED use. For example, UPMC began a patient-centered medical home pilot initiative about a year before Connected Care began. Through this pilot, UPMC placed nurse

care managers in primary care practices to help coordinate care for members with more complex needs. UPMC also partnered with DPW on an ED diversion program, which provided access to PCPs in behavioral health agencies several days per week. Both UPMC and CCBH had several other quality improvement projects in place. Leaders at both plans had begun quality initiatives related to polypharmacy, use of atypical antipsychotics, and use of antipsychotics in children. In addition, UPMC had placed pharmacists on the same floor with care managers two times per week, creating an opportunity for them to interact more regularly. Although this approach is not viewed as integrating behavioral and physical health care, it is an important step in providing more holistic care, for example, understanding how psychosocial issues can affect medication use, or how medication use can affect physical or psychological health. Although these other programs were in place before the SMI Innovations Project, we did not find similar differences in trends before the intervention began, suggesting that the combination of initiatives contributed to changes in outcomes.

Although most of these efforts by UPMC and CCBH were separate, *they contributed to an environment facilitating organizational change and a movement toward integrated care,* which might have been a factor in the ability of Connected Care to reduce psychiatric hospitalizations and readmissions and to potential improvements in ED use. A number of environmental factors might confound the trend in psychiatric hospitalizations.[10] In particular, the county's only state psychiatric hospital (Mayview) closed during the first year of the intervention. Some Mayview patients transferred to other state facilities, and others moved to community-based settings. Among those who moved into the community, psychiatric hospital utilization could actually increase because these consumers are likely those with more severe and persistent mental illness and they might have difficulty adjusting to living in the community. In the comparison group, the rate of psychiatric hospitalizations did increase, but among the study group, the rate decreased slightly, suggesting coordination between UPMC and CCBH holds the potential to improve care. In addition, the percentage of Connected Care members with readmissions improved during the intervention period but increased slightly for comparison group members, suggesting the plans' emphasis on contacting members after hospitalizations was effective.

Improved outcomes among members who became eligible after the intervention started were likely due to a combination of factors. At the start of the intervention, operational details and processes were still being refined and optimized. By the second year of the intervention period, Connected Care had an improved process for prioritizing members and managing care manager caseloads, and care managers were better acquainted with their respective colleagues and available resources at the other plan (such as pharmacy staff and contacts at community providers). Members who became eligible after the intervention start were healthier than members eligible during the baseline period. It is possible that this type of intervention has a greater potential for impact among individuals with SMI

[10] DPW has gradually deinstitutionalized long-term mental health services over the last several decades, so one might expect psychiatric hospitalizations to decline during the study period (Office of Mental Health and Substance Abuse Services 2010). Despite this trend toward deinstitutionalization, psychiatric hospitalizations have been historically more prevalent in Allegheny County than in other areas of the state, in part because Western Psychiatric Institute and Center (WPIC), located in Pittsburgh, is a nationally renowned psychiatric hospital that draws patients from many other regions and states. Although Assertive Community Treatment (ACT) and community treatment teams were well established in other Pennsylvania counties, they have developed only more recently in Allegheny County. The reliance on psychiatric hospitals left the region with underdeveloped outpatient crisis programs and contributed to greater dependence on the use of emergency departments for care.

who have slightly higher functional abilities. It might take longer to see measurable changes in use among those with greater health and psychosocial needs.

Having the behavioral health and physical health managed care organizations within the same corporate family had benefits for Connected Care. Perhaps most important was having shared leadership and support for the pilot from the highest levels of management at both plans and the county. Support for Connected Care from the top was clear to plan staff members. The ability to build upon existing infrastructure and systems was another benefit for Connected Care. UPMC and CCBH had exchanged data for other joint initiatives to look at the SMI population a few years before Connected Care began. Having had the experience of sharing data before was a benefit to both organizations, although they needed DPW approval before exchanging identified data for Connected Care. In addition, both plans had their own systems in place and routinely generated reports to monitor performance and utilization. They could modify existing reports to make them specific to Connected Care members. UPMC modified its existing automated prescriber notification process for medication adherence for Connected Care and applied strategies from other parts of its business, such as the use of registries with providers to encourage timely preventive screening. Organizations without the benefit of a shared vision for the pilot or prior collaboration would likely need more time to get to the same starting place.

Health plans and behavioral health MCOs, regardless of their corporate structure, are likely to encounter common implementation challenges when seeking to integrate behavioral and physical health. Despite the advantages of having shared leadership and previous interactions, UPMC and CCBH operated within two separate delivery systems and had separate data management systems, provider networks, and staffs with different organizational cultures and approaches to health. Staff members were accustomed to working independently of the other system, and needed time to learn how their counterparts at the other plan operated, what terms they used, how they interacted with members and providers, and what information they could access. In the second year, some remained concerned they lacked sufficient knowledge and skills to provide care in a holistic manner. As one stakeholder described it, "Integration is an unnatural act; it won't happen on its own." Building in time for staff members at all levels to learn about one another (especially care managers, who need to work together and are responsible for interacting with members and providers) and providing staff training to establish a level of comfort in the other field (for example, basic knowledge about schizophrenia for medical staff, or metabolic syndrome for behavioral health staff) will likely be critical for integration efforts with plans of any type of corporate relationship.

Consumer-Level Lessons

Engaging the right number and mix of members requires trial and error to achieve a reasonable caseload that also provides enough power to affect changes in outcomes at the population level. Connected Care initially anticipated engaging only the highest-risk members; however, the group of members assigned the highest risk for both behavioral and physical health was smaller than anticipated. However, adding all members from the next highest risk group raised average caseloads considerably and overwhelmed staff members. Ultimately, the plans identified a process that their staffs could manage but that was not overly prescriptive: Engage the highest risk members and any member with a hospitalization or many ED visits. Specifically, care managers were able to provide varying degrees of support to meet the individual needs of members. Although plan managers noted that it was challenging to find the caseload balance, reaching a large number of members at risk of additional ED use or a readmission was important for detecting statistically significant changes in outcomes during the intervention period.

Member assessments that addressed behavioral and physical health care and psychosocial needs, education about appropriate ED use, and follow-up after hospitalizations were important components of the Connected Care intervention. Because individuals with SMI often had basic social needs such as housing, co-occurring substance use, or multiple behavioral health conditions, care managers described the importance of identifying and addressing underlying psychosocial issues that might contribute to members' higher ED use or a readmission. Care managers at both plans started by asking members about their current providers, behavioral and physical health care, and other needs. Care managers emphasized to members that they could contact their PCPs or behavioral health providers, or use an urgent care clinic instead of the ED. Plan data on member contacts were not available for this study. Further exploration of the number and types of contacts between care managers and members or providers might provide useful information about whether and at what levels the intensity of contact could contribute to reductions in ED use or readmissions.

Although member consent is an important vehicle for greater information sharing, understanding how consent is used in implementation is critical when assessing outcomes for this subgroup. We did not see as many favorable outcomes among consented Connected Care members as might have been expected, potentially due to three factors. First, Connected Care decoupled the need for consent and provision of the intervention. Although having member consent enabled plan managers to share more information and enhanced their ability to integrate care, the plans did not limit outreach only to members who consented. Anecdotally, however, care managers reported that having a member's consent made a big difference in their ability to coordinate care. A second factor that might have contributed to few changes in outcomes among consented members was the poorer health status of those members. Members who consented had more health conditions at baseline, such as diabetes, hypertension, and schizophrenia, than those who did not consent. Because consented members tended to be sicker, care managers might have needed more time to work with members to address multiple co-morbid conditions before they could address ED use. Finally, it is unclear how many members had active consent over the course of the intervention period. Based on monthly program updates, up to 1,500 members provided consent at any point; however, 870 members provided consent according to the data files specifically requested for the evaluation. Members could withdraw their consent at any point, and some members might have provided consent solely to receive the gift card and were not otherwise engaged in the program. Thus, it is likely that the number of consented members was fewer than 870, suggesting that less than 10 percent of the 8,633 eligible members truly embraced having their information shared among their providers—a proportion that was likely too small to have a significant effect on the outcomes.

Provider-Level Lessons

UPMC's presence in Allegheny County and existing infrastructure facilitated outreach to providers. The UPMC network of medical and behavioral health providers and hospitals (both those that UPMC owns and those affiliated with UPMC) is large. UPMC owns most of the hospitals in the region, which meant UPMC could readily identify when Connected Care members were hospitalized and notify CCBH about physical health hospitalizations in near real time. Because many providers had affiliations or previous interactions with UPMC or CCBH, they were potentially more receptive to learning about the Connected Care program. UPMC and CCBH held meetings and gave presentations to introduce the program to providers; care managers reported that these events seemed to inform behavioral health providers about why they were being contacted by care managers or receiving notifications from the plans.

Relationships with individual providers helped engage them in care integration. Although limited in scope, our interviews suggest that the plans were able to engage providers with whom the care managers

had relationships. Care managers increased their contacts with providers to inform them of member hospitalizations or frequent ED use, and providers began to see them as a resource. Several UPMC and CCBH care managers had in-person contact with providers, which seemed to help the collaboration.

Provider engagement strategies are effective when they meet a provider's need or interests and fit the provider's existing workflow. Many providers welcomed support to better manage care for members with SMI and information that would shed light on members' conditions outside their area of expertise. However, member consent remained a barrier to information sharing, and some PCPs lacked not only knowledge about how to connect with the behavioral health system, but also time and resources. Connected Care leaders noted that it was particularly difficult for providers to implement new processes or workflows for members with SMI when they represented a small proportion of their member panel. This situation points to why Connected Care worked well in the primary care practice in McKeesport: The practice had a large number of members with SMI, had additional support from a nurse care manager employed by UPMC, and did not have to interrupt its existing workflow (due to the nurse care manager). UPMC was considering future strategies that would identify and build on the strength of providers with a specific interest in the SMI population. For example, one of UPMC's long-term strategies is building a residency program at the medical school focused on integrating psychiatry and family medicine.

Conclusions

The Connected Care model, one in which the physical health plan and behavioral health MCO share corporate leadership, could be difficult to replicate in other regions because of limited overlap between physical and behavioral health MCOs. For this reason, Connected Care leaders themselves did not view this model as practical more broadly. Although both UPMC and CCBH had plans to continue the program in other regions, they planned to do so separately, because they did not share many other geographic regions to expand Connected Care jointly. As more health plans offer behavioral health services, there is potential for other plans to adopt a similar model.

The Connected Care experience suggests, however, that the corporate structure of the MCOs is not a critical factor for implementation. The Connected Care pilot benefited from shared corporate leadership, but still faced challenges that plans from two separate corporate entities would face, largely because the companies operated with systems of care for behavioral and physical health that remained distinct. The pilot provided partners with information about key elements of integrated care that they would carry into next-generation efforts in other regions and populations. Possibly most important for creating sustainable change was how the partners built the pilot in conjunction with similar initiatives to fit into the organization's overall strategy for improving care. They focused on comprehensive member assessments, coordination of psychosocial services, member education, medication reviews, hospital follow-up and care transitions, and partnering with primary care practices to enhance medical homes.

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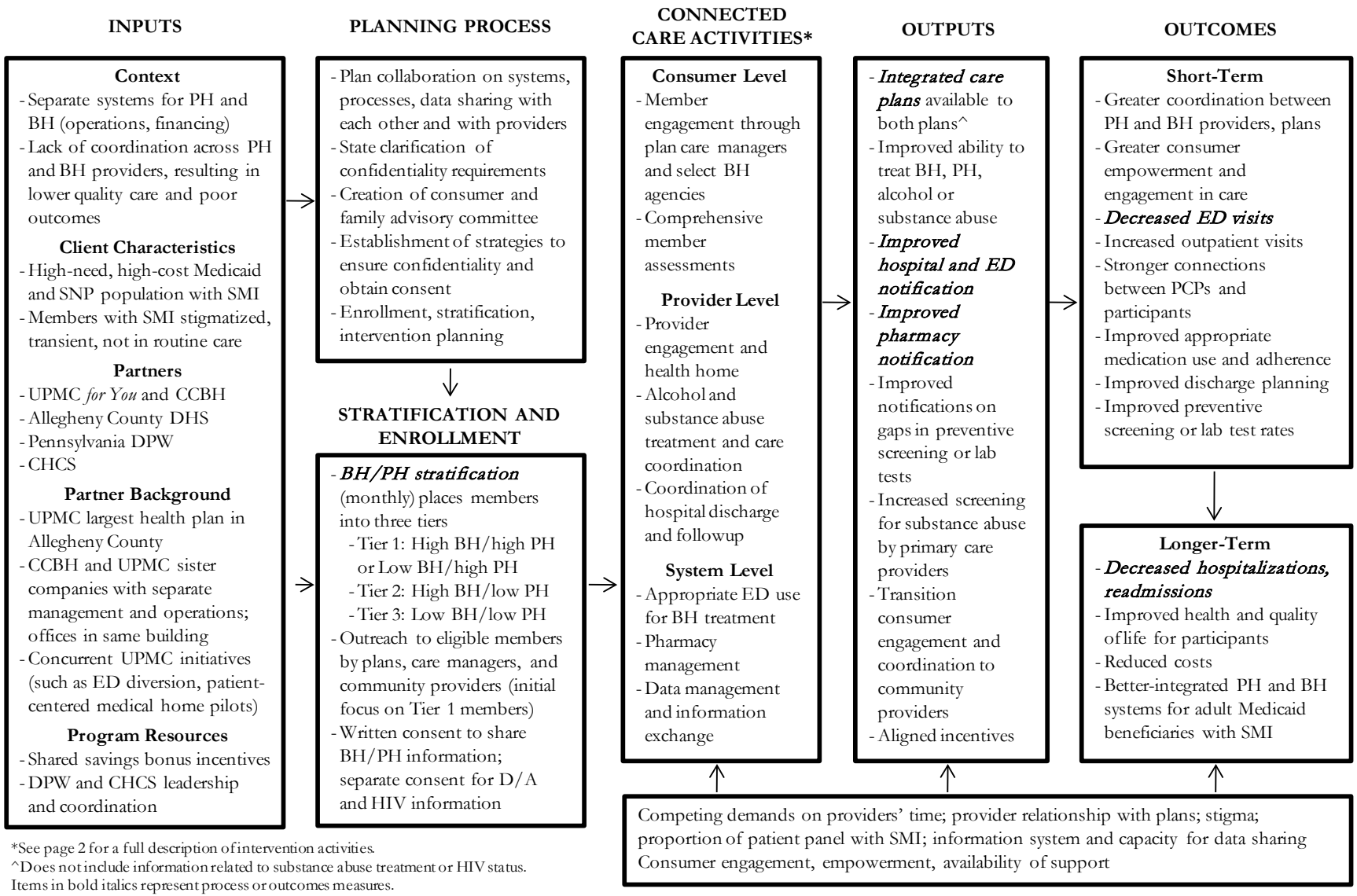
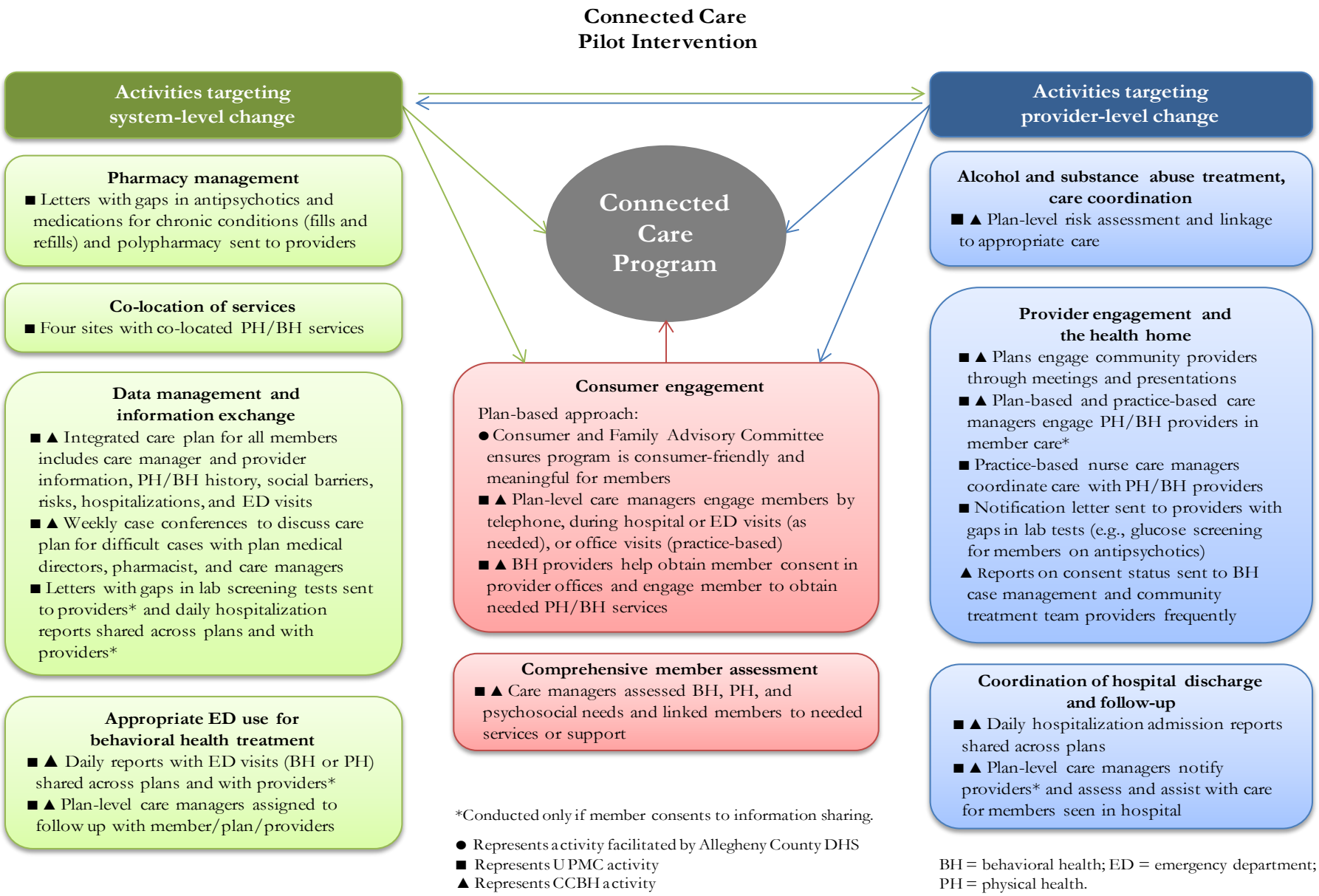
Figure 1. Logic Model for the Connected Care Pilot Intervention



*See page 2 for a full description of intervention activities.
^Does not include information related to substance abuse treatment or HIV status.
Items in bold italics represent process or outcomes measures.
BH = behavioral health; CCBH = Community Care Behavioral Health; CHCS = Center for Health Care Strategies; D/A=Drug and alcohol; DHS = Department of Human Services; DPW = Department of Public Welfare; ED = emergency department; PCP = primary care provider; PH = physical health; SMI = serious mental illness; SNP = special needs plan; UPMC = University of Pittsburgh Medical Center.

Figure 1 (continued)



APPENDIX A

MEMBER STRATIFICATION CRITERIA FOR HIGH RISK

Appendix Table 1. Member Stratification Criteria for High Risk

High Physical Health Risk	Three or more emergency department visits in the past three months, or Three or more inpatient admissions, excluding maternity, skilled nursing facility, and rehabilitation, in the past six months
High Behavioral Health Risk	Community Care High Acuity Level 1 or 2:[a] - Discharge from a state mental hospital, - History of being served in a state mental hospital within the past two years, - Diversion from a state mental hospital to a less restrictive level of care, - Five or more admissions to most restrictive levels of care,[b] including readmissions to those levels of care within 30 days, - Four admissions to most restrictive levels of care and inpatient mental health or residential treatment facility admission or community treatment team admission, - Two or three admissions to the most restrictive levels of care and inpatient mental health along with open authorization for certain behavioral health services,[c] or - One admission to most restrictive levels of care and inpatient mental health OR residential treatment facility discharge in past 12 months with authorization for certain behavioral health services[d]

Note: The plans identified and stratified newly eligible members every month. The plans could move members to a higher risk level based on service use or to a lower risk level if the person's condition stabilized for one year.

[a] Community Care High Acuity Tier level was assigned electronically by a population-focused data system according to a member's 12-month treatment history.

[b]The most restrictive levels of care were defined as inpatient mental health, inpatient detoxification, inpatient rehabilitation, nonhospital detoxification, nonhospital rehabilitation, and halfway house.

[c]Specific services included school-based partial, in-home family-based, partial hospitalization, behavioral health rehabilitation services for children and adolescents, diversion and acute stabilization, clozapine services, methadone treatment, targeted case management, or outpatient therapy.

[d]Specific services included school-based partial, partial in-home family-based, diversion and acute stabilization, clozapine services, methadone treatment, targeted case management, or behavioral health rehabilitation services for children and adolescents.

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